



India



Top:
Birds at sunset

Above:
**The world's
biggest** silk
market



Above:
Building the
Bangalore railroad



Left:
Producing more
power



Rebuilding an irrigation canal



Recabling India's
IT capital



Rolling stock on
the Delhi metro



A new tunnel
for the metro

on the road...



Taking the train

WHEN A 27-YEAR-OLD WOMAN gave birth recently to a baby girl on a moving Delhi metro train the incident became instant national celebrity news.

Metro officials proudly said it was the first time this had happened on the metro, and probably on any similar urban transit system anywhere in the world.

Perhaps, but in addition to being a dramatic entry

and in a city renowned for the color and chaos of its transportation system, it is as clean, safe and efficient as the Japanese network.

The Delhi metro is perhaps the 'crown jewel' in India's efforts to modernize, bringing not only

Delhi's chaotic roads

a degree of relief to the travelling public but also helping to change the very social fabric of the city.

Encouraged by Delhi's success, other Indian cities such as Bangalore, the country's burgeoning IT capital, Chennai and Kolkata are pursuing similar modernization plans, supported by multi-million-dollar loans from the Japan International Cooperation Agency (JICA).

Japan and India established diplomatic relations in 1952 and six years later Japan began Official Development Assistance (ODA) to the country. In the last few years India has consistently been one of the largest development partners of JICA.

In addition to the various metro systems under construction, JICA provides assistance on other infrastructure projects such as highway construction, power supply, industry, water and sanitation, as well as forestry and agriculture, health and education,

into the world for a baby the parents subsequently named Maitraiye, the incident also underlined in an unusual way India's struggle to modernize its creaking infrastructure and consolidate itself as a global economic power and reform large areas of society.

With generous financial and technical assistance from Japan, the capital launched the first section of the metro in 2002. Today, there are 190 kilometers of track, equivalent to Tokyo's own metro system,



Delhi expands its metro system



Women ride in security

training courses, partnerships and the dispatch of young volunteers, JOCV, to India.

Eternal India

THROUGHOUT HISTORY THE SUB-CONTINENT has enjoyed one of the most dramatic, colorful and important places in human development. At the end of British colonial rule in 1947, the modern state of India was created together with neighboring Pakistan and, subsequently, Bangladesh.

India today is the world's largest democracy. Its estimated 1.2 billion people will soon replace China as the world's most populous nation. It was the hub of the so-called 'green revolution' in the 1960s which helped feed hundreds of millions of the world's poorest people and it has become an emerging economic powerhouse and donor to other developing nations.

But the country still faces enormous problems as was evidenced in July 2012, when as many as 630 million people—the combined populations of Europe and the United States—endured what was probably the world's worst ever power failure. Tens of millions of people remain rooted in poverty and there is wide-

spread disparity within society.

Development experts today are in general agreement that the creation of an efficient infrastructure base is key to overall development in other areas such as health, education, food security and the eradication of poverty, which is why JICA's involvement is playing a key role in India's overall push to modernize.

The Delhi metro has proved both an economic and social catalyst. At least two million people use 142 stations to travel seven lines. Annual carbon emissions have been reduced by some 283,000 tons and the equivalent of 150,000 vehicles have been removed from the city's clogged streets. (Unfortunately, as the capital's population continues to expand new vehicles are constantly added at the rate of 1,000 per day to the city's infamous traffic jams.)

In this constant transportation battle, an additional 120 kilometers of metro line have already been approved, with JICA's ongoing collaboration.

Rejuvenated

OFFICIALS SAID THE HEART OF OLD DELHI and the commercial district have been rejuvenated as have other rundown sections of the city.





Bangalore's metro system takes shape

The social impact has been enormous. The stations and trains are clean, punctual and cheap with the lowest fare eight rupees (approximately 16 US cents). There is hardly any spitting, dirt or garbage which are normal on the country's older, mainline trains.

Lawyers and laborers travel the trains together, helping break down the country's infamous caste system, and women and young girls increasingly travel the metro at all times of day, encouraged by the knowledge that the entire system is under constant surveillance.

"We feel totally safe on the metro and can travel at anytime," said one mother and her daughter to a visitor. The safety and cleanliness factor also encouraged 27-year-old Juli Devi to travel by metro in time to reach a hospital to deliver her baby. The metro, its officials and passengers helped instead.

Delhi's metro world can seem surreal at times and Anuj Dayal, the system's chief spokesman, describes it as a "time machine. The metro represents the first-world environment but when you leave it you are plunged back into noise, chaos and filth."

Transformative Effect

BANGALORE'S SYSTEM IS HAVING AN equally transformative effect, even though only six stations and 6.7 kilometers of track out of a targeted total of 42.3 kilometers are functioning.

India's high-tech capital, however, is alive with tunneling and soaring aerial tracks as the city rushes to completion by 2013. Reiko Abe, Japan's first ever female university graduate in tunneling, is working on the system as is Yukio Tezuka who, after a lifetime working on similar projects around the world, describes Bangalore as "the most difficult of all because the tunneling terrain varies from soft soil to diamond hard granite, making drilling slow and costly."

"JICA was the catalyst for all of this," enthused N. Sivasailam, Managing Director of the Bangalore Metro Rail Corporation, to a visitor recently. "Without



Improving India's healthcare

JICA nothing would have happened."

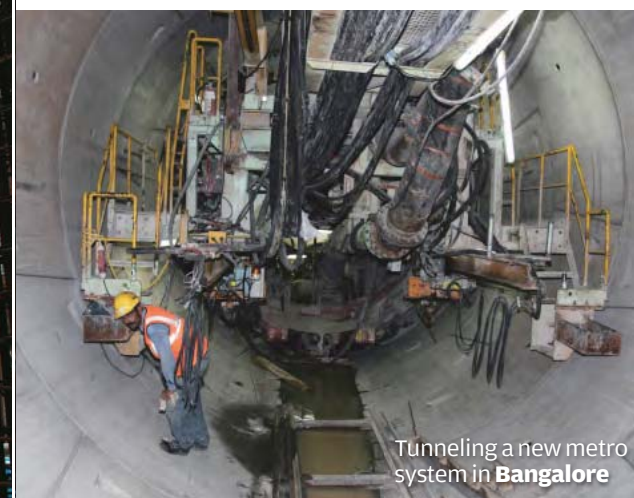
He said that cities across India were now contemplating similar rapid transit systems. JICA has already provided ODA loans equivalent to US\$380 million to a project in the city of Kolkata and US\$1 billion for a Chennai metro whose phase 1 is scheduled for completion in 2014-15. Japanese soft loans underwrote half the US\$6.6 billion cost of the first two phases of the Delhi metro project.

Equally critical to India's economic growth is the need for new and reliable power, as underlined by the July power failure. Along with the metro system, JICA is helping to reduce electricity loss in Bangalore by as much as 30%, helping to finance the introduction of a distribution automation system (see page 10).

In Andhra Pradesh State JICA helped finance construction of a 1,000-megawatt coal-fired thermal power station to boost power supplies and regional economic development.

JICA has conducted a feasibility study for high speed 'dedicated freight corridors' between Delhi and the country's major port, Mumbai, in the west and between Ludhiana, Delhi and Kolkata in the east.

Kiyoshi Dachiku, who has spent a lifetime helping to design, build and maintain auto routes in



Tunneling a new metro system in Bangalore



Rewiring Bangalore



Education is a high priority

Japan and across the globe, is assisting India to upgrade its auto route system. Although the country has four million kilometers of highway, only 200 are high-speed expressways (see page 8).

Water, Trees and Silk

BRITISH COLONIAL OFFICIALS BUILT DELHI'S first water treatment plant in 1937, but nearby is the newly commissioned Okhla plant which processes some 30 million gallons of sewage per day. It is part of the so-called Yamuna Action Plan begun in 1992 and which will be completed in 2017 with JICA committing US\$609 million to a project whose overall aim is the reduction of pollution in the Yamuna River and the improvement of water quality for tens of millions of people who live along its banks.

In southeast India JICA has helped to rehabilitate the 305-kilometer irrigation canal and 960 kilometers of secondary channels, bridges, aqueducts and farm roads, dramatically improving the lives of some two million poor farmers and their families who lead precarious lives growing paddy rice, sunflowers, ground nuts and millet.

Millions of other rural dwellers are being helped by a series of 21 JICA projects aimed at preserving

the country's forests which currently cover around 25% of the landmass but which are threatened by rapid population growth, industrialization, the spread of agriculture and climate change.

In addition to reseedling vast areas of denuded land and protecting existing tree cover, an equally important component of all of the projects is to encourage closer ties between village communities whose livelihoods depend on the forest and forestry officials and promote small-scale industries ranging from juice production, basket weaving, pottery and flower production.

JICA is the largest donor in this sector.

In the field of health the agency has prioritized re-

ducing infant and mother mortality rates, improving access to health care for the socially disadvantaged, and strengthening the battle against infectious diseases.

In education it is collaborating with the Indian Institute of Technology in Hyderabad, financing the campus building construction and exchanging faculty, industry experts and students.

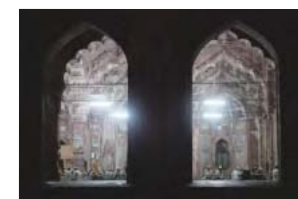
Since the early 1990s a succession of long- and short-term Japanese experts have been helping India strengthen its important and famed silk industry.

The country is the world's second largest producer, after China, but also the largest single consumer of silk. But most of the country's production is based on the so-called multivoltine variety of silkworm which, though suitable to the tropical Indian climate, produces a relatively inferior and low-yield product.

JICA experts and their Indian counterparts introduced a series of new 'bivoltine' hybrids which produce better yields and a higher quality final silk product.

Farmers said their incomes had initially tripled though they continue to face new problems because the hybrids are delicate and fragile and labor and energy costs are increasing while urban sprawl has cut into the amount of land available to grow the vital mulberry bushes on which the silkworm feed.

India has made massive strides in many areas, but social and economic progress remain fragile.



roads, water, power

Infrastructure is key to economic and social development. In addition to helping finance urban rapid transit systems, JICA is also involved in highway construction, water and sewage projects and helping India to strengthen its power system.



India urgently needs to upgrade its overcrowded and chaotic highway system.

getting things moving

India has four million kilometers of highway. Across a country one-third the size of Europe or the United States only 200 kilometers are expressways.

Kiyoshi Dachiku has spent a lifetime helping to design, build and maintain auto routes in Japan and across the globe and his latest, and one of his most difficult assignments is to assist India to expand its auto route system.

Development experts generally agree that a comprehensive infrastructure system of roads, ports and power supplies is essential to underpin improvement in other areas such as health and education.

Dachiku describes a system of high-speed highways as “similar to the backbone of the human body. It holds everything together.” He suggests that expressways are “three times safer, three times faster and carry three times as much bulk traffic as regular highways.”

India’s early transportation development relied heavily on the now antiquated rail system. In more recent decades with limited resources, the government emphasized the development of a national highway system of two or four lane routes which today are often

chaotic free-for-alls with few rules and waves of meandering trucks, buses, three- and four-wheel taxis, bullock carts and motorcycles.

In trying to build new highways in India one of the most intractable problems, one which can take years to resolve, is negotiating land acquisition from conservative and often suspicious farmers and homeowners.

Dachiku has written a blizzard of reports and innovative suggestions to streamline the acquisition system including an unusual layout for toll booths which could both speed up vehicle processing and reduce the amount of land needed to build a complex.

Shibuya in the heart of Tokyo is one of the busiest spots in the world, but the application of a special heat resistant paint on the streets there helps reduce the overall temperature by as much as 10 degrees, according to Dachiku.

He suggests similar coatings could be used in tropical India where it might be impractical to plant trees for shade. Such a system would again reduce the need for land acquisition.

But he acknowledges, “The challenge is very big and things move very slowly here. I feel at times as if I am slapping my palm against the backside of an elephant.”

“today we can hear the birds singing”

The Yamuna River rises from the pristine Yamunotri glacier in the lower Himalaya mountains before snaking across the plains below, through the Indian capital of Delhi before joining the sacred Ganges River in Allahabad.

Tens of millions of people live along its route but because of increased urbanization, industrial and agricultural activities and an exploding population the river is heavily polluted and their livelihoods and health are endangered.

Further south, Bangalore, capital of India’s burgeoning IT industry, also faces massive water problems. It needs more water and better sewage and treatment facilities for the country’s fastest growing urban population, which has already reached more than eight million and is expected to double again within a few years.

JICA is involved in two hugely ambitious, multi-year projects to meet the challenges in both areas as part of its overall commitment to improve the nation’s water and sanitation situation.

The so-called Yamuna Action Plan begun in 1992 will only be completed in 2017. JICA committed some US\$609 million or

more than 80% of the total cost to the project whose overall aim is the reduction of river pollution and improvement of water quality for the river population in Delhi, Haryana and Uttar

of corpses into the river.

The major components, however, were the construction or rehabilitation of hundreds of kilometers of sewers and the construction or upgrading of dozens of sewer pumping stations and sewage plants.

On the outskirts of Delhi, the old and the new sit side-by-side. The city had only been the country’s capital for a quarter-century and the population was a few hundred thousand when British colonial authorities built the city’s first treatment plant in 1937. It is still functioning,

plant which processes some 30 million gallons of sewage water per day.

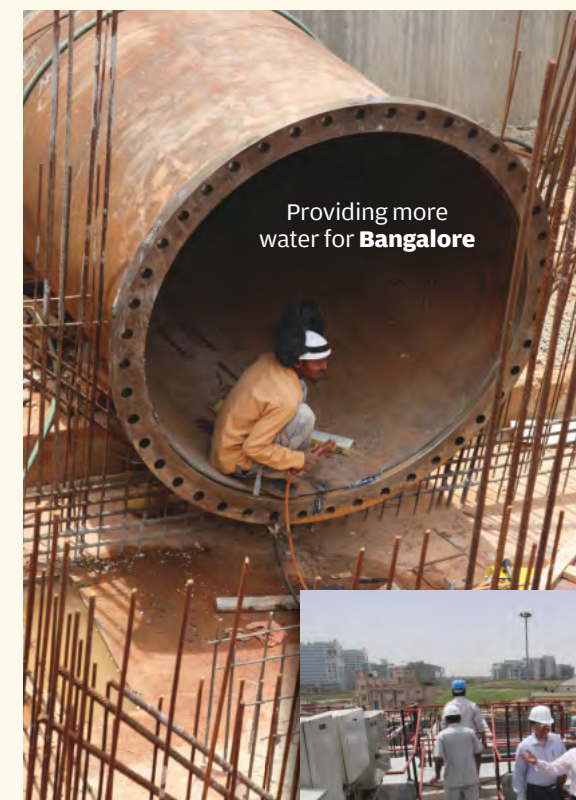
“Without such improvements as this,” said one plant official recently, “the river would already be dead. There would probably be no water, only raw sewage. Today, we can hear birds

“Without such improvements as this,” said one plant official recently, “the river would already be dead.”

singing from the nearby sanctuary. They are returning and the lives of millions of people have been improved.”

Bangalore’s very success as an increasingly important IT, medical and educational center created its own problems and JICA is providing 85% of the funding to increase fresh water supplies to the metropolitan area by 50%, rehabilitate dozens of kilometers of sewers and build additional sewage treatment plans.

Despite its obvious wealth, there are also more than 600 officially designated slum areas in and around the city. An innovative component of the overall project, conducted through four local nongovernmental organizations, is to begin to help the estimated 600,000 people in those areas to receive clean and regular water supplies and eliminate waste.



Providing more water for Bangalore



many of its operations conducted manually and controlled from a tiny room large enough for only two people.

Nearby is the gleaming, newly commissioned Okhla treatment

When Dutch engineers built a canal in 1870 in what is today Andhra Pradesh State in southeast India it was an engineering marvel.

The canal stretched more than 305 kilometers from the Tungabhadra River east and southwards to the Penna River, acting both as a major navigation waterway and, to-

gether with a further 825 kilometers of secondary channels, as an important irrigation system for farmers.

In the intervening decades rail and road displaced the canal as a transportation artery, and as the channels themselves crum-

bled the livelihood of hundreds of thousands of poor farmers was imperiled.

As part of JICA’s overall commitment to

better agriculture,

better education

strengthen Indian agriculture and rural development a program was approved in 1996 and virtually completed by summer 2012 to

canal, according to team leader Yasuhiro Kamiya, who has spent 15 years in India as a civil engineer.

rehabilitate the system.

A 630-meter barrage, longer than any similar structure in Japan, was constructed at the mouth of the

The entire main canal was renovated, together with 960 kilometers of secondary channels; bridges, aqueducts and farm roads were improved and 60 local water users’ associations and other farmers’ organizations were strengthened.

Kamiya estimates that as many as two million people—farmers and their families →

ರೂವೇ, ವಾಟರ್, ಪೌವರ್

→ who grow paddy rice, sunflowers, ground nuts, millet and chilis—has been significantly improved.

“Before, the system had deteriorated so much most of us didn’t get any water,” one farmer told a visitor recently. He and other neighbors said that subsequently rice production had quadrupled.

“The main benefit has been education,” another farmer said. “We can send our children not only to school but to higher edu-



Rehabilitating the canal

cation now.” Another said, “Now we have tractors” and a neighbor added, “And mobile phones.

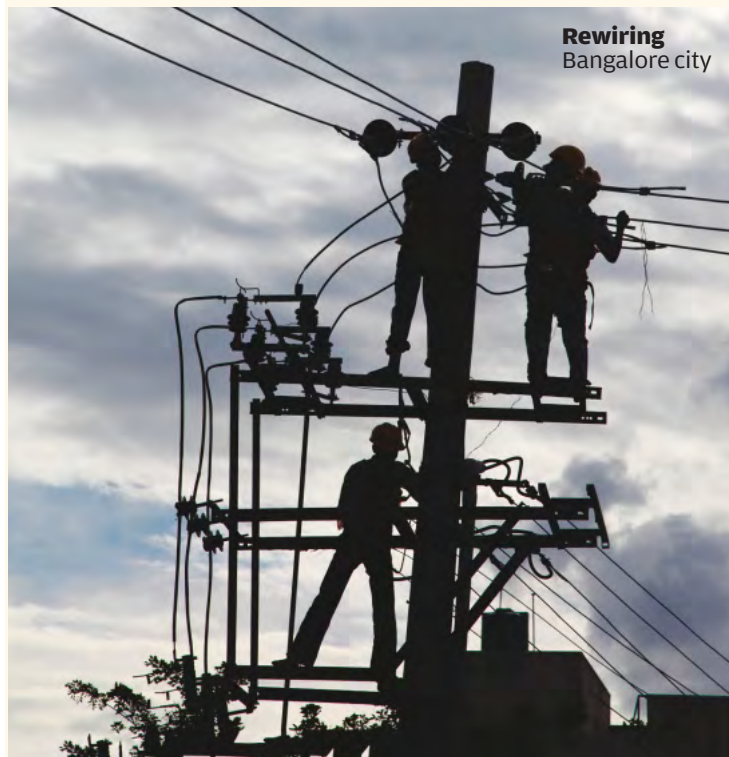
Maybe two or three of them.” Some 73% of Andhra Pradesh’s 75 million population

A program was approved in 1996 and virtually completed by summer 2012 to rehabilitate the system.

are tied to agriculture and survival remains fragile.

Kamiya, who also spent many years in Nigeria and other developing countries, is now involved in another JICA financed project to rehabilitate and improve irrigation facilities, water management and agricultural practices in another part of the state.

what next after the ರೂವೇ'ನ ವಾಟರ್ ಪೌವರ್ ಫೈರ್?



Rewiring
Bangalore city

It was perhaps the world’s worst ever power failure. As many as 630 million people—twice the population of the United States or Europe—were

blackout when electricity supplies to large parts of northern India were severed.

The July crisis highlighted not only the enormous problems fac-

ing the country’s power industry, but paradoxically the vast potential of one of the world’s burgeoning industrial powers if it can successfully overcome major infrastructure challenges.

Even before the dramatic electricity shutdown, official figures indicated that consumers and businesses in India lose around 4,333 minutes annually because of electrical outages and a so-called energy supply-demand gap has been increasing for the last decade. That compares to just 11 minutes annually in Japan.

JICA has contributed significantly to helping India both increase its energy resources and lower greenhouse gas emissions, financing high-efficiency thermal power plants, improving existing plants and transmission and distribution networks, training Indian technicians and managers and strengthening renewable energy development and energy conservation

Currently, for instance, in the first project of its kind in any

major Indian city, JICA is helping to rewire and reduce electricity loss in Bangalore, once described as a garden city, now the country’s fastest growing metropolis with a population of 8 million, the capital of the country’s flourishing IT industry and home to hospitals, medical centers, schools of engineering and other centers of higher learning.

Electricity demand has doubled in the last few years, but an innovative three-phase project, 80% financed with JICA loans, aims to reduce outages by 30%, improving supply reliability and efficient energy cost controls by the introduction of an area-wide distribution automation system (DAS) and hundreds of kilometers of recabling.

In Andhra Pradesh State on India’s eastern coastline Japan earlier helped finance construction of a 1,000-megawatt coal-fired thermal power station at the port of Vishakhapatnam to ease repeated power shortages and help end a bottleneck to overall regional economic development.

ರೂವೇ'ನ ಫೈರ್ ರೂವೇ

VIRTUALLY EVERY DAY OF THE year, gaggles of loud, gesticulating men gather in a covered marketplace between the ancient city of Mysore and India’s new high-tech center at Bangalore examining and arguing over large green trays piled high with mounds of small white or yellowing balls of fluff.

Locals in Ramanagaram—the City of Silk—like to claim this is the largest market of its kind in the world, the place where some 1,000 farmers daily come to sell small balls of ‘fluff’—in fact the cocoons of silkworms—to some 400 buyers, known in the trade as reelers.

It is but one step in the long process of converting the fine covering of the silkworm cocoon into the silk thread which will be used to produce some of the world’s most beautiful and seductive clothing, tapestries and other luxury items.

China is the world’s largest silk-producing nation, but India is both the second largest producer, the largest consumer and one of the few areas where silk production has been increasing in recent years.

However, India has had a problem. Most of its production is based on a so-called multivoltine variety of silkworm which though suitable to the tropical Indian climate produces a relatively inferior and low-yield product.

Since the early 1990s a succession of long- and short-term JICA experts and their Indian counterparts have introduced a series of new hybrids or a bivoltine variety to an increasing numbers of Indian farmers.

It has been a delicate and highly complex process.

The bivoltine variety thrives in temperate climates rather than in

Sorting male
and female
silkworm
larvae



Separating
the silk
thread from
the cocoon

processing, incubation and disease control to cocoon drying, testing, storage, cooking and improved reeling techniques.

Later phases of the multi-year JICA project refined the new technologies and strengthened sericulture extension services.

It has paid major dividends. India has continued to import as much as 8,000 tons of higher-grade bivoltine silk from China annually, a major foreign exchange drain. Increased domestic production could significantly reduce such imports.

Farmers interviewed recently said their income per acre had jumped from 50,000 rupees (1,000 dollars) to 150,000 rupees (3,000 dollars) per acre after the completion of the JICA project and the number of rural jobs had also increased.

As a by-product of the project, Indian experts, with JICA financial assistance, also held a series of training seminars for other third-country officials from Kenya, Ghana, Nigeria, Laos, Nepal, Uganda, Madagascar and Kyrgyzstan.

The program was deemed so successful it won a prestigious JICA Award from among nearly 10,000 programs submitted for consideration.

But farmers and Indian officials worry about future problems. The newly introduced hybrids are extremely delicate and fragile. Overall, farmers said recently, yields have begun to drop while costs such as labor and energy are increasing.

And while nearby Bangalore has emerged as India’s high-tech center, urban sprawl has begun to cut into the amount of land available to grow the mulberry bushes on which the silkworms feed.

Locals in Ramanagaram—the City of Silk—like to claim this is the largest market of its kind in the world.

tropical conditions. Indian extension workers and farmers have had to learn new skills ranging from producing superior quality mulberry leaves for the silkworms to feed on, seed production, preservation,



INDIA, THE WORLD'S seventh largest country, is also one of the planet's most bio-diverse regions. Forests cover almost one-quarter of the landmass and range from evergreen tropical rain forests in the Andaman Islands to dry alpine scrub in the Himalayas, pine forests, semi-arid desert growth and coastal mangroves.



Flower growing provides more income for villagers

"Just a few years ago we had to leave the village to find work. Now, people come here for employment."

munity of fewer than 500 people which saw its already poor standard of living decrease year by year as surrounding forest land was relentlessly degraded because of uncontrolled grazing, constant forest fires and the destruction of trees for firewood.

But since 2006 its fortunes have changed. Villagers cooperated with

local forestry officials to actively protect the forest, replant swathes of denuded land and replenish the local water table.

A recent visitor saw villagers demonstrate a series of small-scale activities including flower growing, garland manufacture and animal husbandry.

Members attending a village meeting chorused that "Just a few years ago we had to leave the village to find work. Now, people come here for employment."

Drainage ditches have been installed and one villager said, "Our health has improved because of that and the provision of fresh water." Parents said that for the first time they could now send their children for higher education.

One village elder said, "A few years ago our village was dying. Now, we are very healthy."

donor in this sector.

The agency's activities have several basic aims: to help preserve existing forests, regenerate damaged stretches of land with reforestation, strengthen government agencies and improve personnel skills. Equally importantly, projects aim to reduce poverty among communities who rely primarily on the forests for their livelihoods by promoting closer cooperation with local officials and introducing income-generating activities.

An ambitious US\$147 million eight-year project covering the whole of the southern Karnataka state incorporates all of these aims including protecting coastal mangrove forests and the marine ecosystem. Environmental education is being taught in 2,000 schools.

Idigaradasarahalli is a typical rural com-



SIGNS OF A MYANMAR SPRING?

Reputedly around 2,600 years old, the magnificent gold leafed Schwe Dagon pagoda in Yangon is the symbolic heartland of Myanmar

Its civilization stretches back 13,000 years. Mighty empires have flourished since then but so has constant war. The land is awash with sapphires, pearls, jade and particularly rubies—90% of the world's supply comes from here—with forests of teak and other valuable woods and with abundant supplies of oil and natural gas. But it is also the world's second largest supplier of opium poppy cultivation.

Myanmar today, as throughout its long history, remains a land of major contrast and contradiction.

Official figures estimate that 90% of its 55 million population is literate, an extremely high figure for a developing country. But the World Health Organization (WHO) said it also has one of the world's poorest healthcare systems.

Because of slow economic development and interna-

tional isolation, much of the country's environment and ecosystems remain pristine and untouched. Still, its valuable mangrove forests in heavily populated coastal regions are under such pressure they could disappear entirely within a few years.

And despite its vast natural potential Myanmar is one of the world's poorest countries plagued by years of internal unrest.

Gradual Change

There are signs that Myanmar may be slowly changing. Fragile agreements have been reached between central authorities and some of the rebellious internal ethnic minority groups. A new government is opening the country to the outside world after decades of virtual isolation.

President Thein Sein visited Japan in April for discussions with Prime Minister Yoshihiko

SIGNS OF A MYANMAR SPRING?

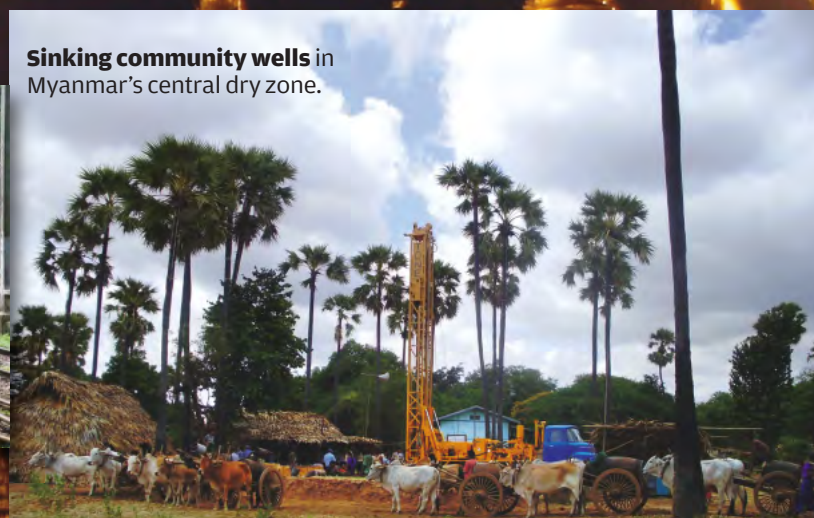
Myanmar today, as throughout its long history, remains a land of major contrast and contradiction.



Introducing a new 'pupil friendly' education system.



Yangon's entire infrastructure of roads, rail, river and energy networks needs a major overhaul.



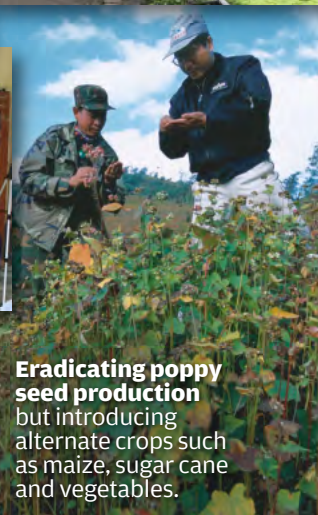
Sinking community wells in Myanmar's central dry zone.



JICA is helping to improve the rice production system.



Helping vulnerable groups including the deaf, patients needing specialized rehabilitation and those at risk from HIV/AIDS, malaria and tuberculosis.



Eradicating poppy seed production but introducing alternate crops such as maize, sugar cane and vegetables.



Mangrove forests are being rehabilitated after being devastated for decades.



Myanmar's infrastructure—roads, bridges, railroads, river and air traffic, energy—needs to be totally rebuilt.

Noda and the two sides agreed to cancel most of Myanmar's longstanding debts. That paved the way for increased assistance to Myanmar, particularly access to yen loans under Tokyo's Official Development Assistance (ODA).

The Japan International Cooperation Agency (JICA), the country's major development organization, has been active in Myanmar since 1981. But during that time, reflecting global unease with the direction of the then military government, it limited its assistance to basic humanitarian help in such fields as education, health and rural development.

When Cyclone Nargis smashed into Myanmar in 2008, for example, killing at least 78,000 people (another 56,000 are still missing) and affecting more than two million others, JICA immediately dispatched emergency supplies and a medical team to help the

victims.

The agency helped to rehabilitate the port of Yangon where dozens of vessels had been sunk and to restore rural life and agricultural production.

At that time JICA had been involved in one project to rehabilitate devastated mangrove forests in the southern Ayeyarwady Delta which, ironically, in the past had helped protect local communities from natural disasters. That project was destroyed by Cyclone Nargis but has been re-launched and extended through 2013.

Long-Term Help

The agency is involved in other long-term humanitarian assistance with Japanese experts, technical assistance and financial support helping to combat infectious and deadly diseases such as HIV/AIDS, malaria and tuberculosis, providing better rehabilitation services for people suffering from complicated

medical problems such as cerebral palsy, strokes and spinal cord injuries, and assisting Myanmar's estimated 140,000 deaf people to lead more productive lives.

In the country's central dry zone—close to one of the world's most magnificent ruins at Bagan where there is a collection of some 2,800 monuments dating from the 10th century—JICA has been helping to sink hundreds of new wells and rehabilitate others to provide safe water supplies for local communities and assisting in reforestation of a denuded landscape.

In the northern Shan State where villagers had grown opium poppy seed for decades as their major crop, JICA's assistance, which began in 2005, is continuing to help those communities switch to alternate crops such as maize, sugar cane and vegetables, to maintain their rural livelihoods.

A five-year project is helping

to strengthen the country's vital rice production system and in primary schools a radical, more student friendly, system of teaching is being introduced.

Big Changes

Going forward, there is likely to be major expansions in several other key areas.

Several hundred Myanmar students and trainees will undergo study in Japan each year to strengthen the country's pool of skilled manpower in various fields.

A key component of JICA activities in other parts of the world is to help regions and communities emerging from conflict situations.

In Myanmar, hundreds of thousands of civilians have been internally displaced and as many as 200,000 fled as refugees to neighboring countries during decades of internal conflict pitting central government forces against some of the

country's 135 ethnic minorities who comprise 30% of the country's population.

But with tentative signs of peace emerging, JICA earlier this year sent several delegations to the southwest Kayin State which borders on Thailand to explore a proposed five-year program to promote the rehabilitation of basic infrastructure in the area and then educational, health and shelter requirements.

There are never enough resources to cover all the needs of developing countries, but experts increasingly believe that improving basic infrastructure such as roads, bridges, ports, water systems and power will provide the springboard for advancement in other areas such as the economy, health and education.

Myanmar's infrastructure is decades old and crumbling. JICA officials and experts are currently involved in a range of

discussions, feasibility studies and initial agreements to bolster this sector.

Several involve the development of comprehensive blueprints covering such areas as the national transportation system, the railroads and the expansion of Yangon city.

As many as 30 Japanese experts will help devise a comprehensive master plan for Yangon, the country's commercial capital with a population of more than five million which is expected to double within the next 25 years.

The agency has already helped other rapidly expanding urban centers such as Hanoi, Manila, Bangkok and Kabul with similar projects and in Yangon the plan will cover every facet of city life—road, river, rail and air traffic needs, new power sources, water supplies, sewage, drainage, solid waste management and the training of experts to operate and main-

tain new infrastructure.

JICA is providing two new river ferries to link the city center and nearby suburbs across the Yangon River. It will participate in the development of the nearby seaport of Thilawa and a proposed economic and industrial zone.

Japanese experts will advise on how to improve the electricity distribution system in a city notorious for power blackouts in the dry season and another expert is already at work on a water supply project.

Another proposed multi-million dollar project will upgrade the maintenance and safety of railroad infrastructure, most of it dating from the pre-World War II British colonial era.

"The country needs a total overhaul, a total facelift of all its infrastructure," one senior official said recently. That will involve massive expertise, billions of dollars and decades of work. ■

JICA's WORLD

Publisher:

Noriko Suzuki
Office of Media and
Public Relations

Editor:

Raymond Wilkinson

Art Director:

Vincent Winter
Associates

JICA's WORLD

is published by

JICA

Nibancho Center Bldg
5-25, Niban-cho
Chiyoda-ku
Tokyo 102-8012 JAPAN

TELEPHONE:

+81-3-5226-6660

FAX: +81-3-5226-6396

INTERNET:

<http://www.jica.go.jp>

Comments: jicagap-opinion@jica.go.jp

Cover: Eternal India on the road to modernization



The Japan International Cooperation Agency (JICA) is the world's largest bilateral development organization, operating in some 150 countries to help some of the globe's most vulnerable people.